Where Quality Assurance and Information Technology Meet

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Context
A changing landscape

• 98% of students own a digital device; 38% cannot go more than 10 minutes without using one
• The compound annual growth rate for students taking at least one online course is 18.3%
• In 1990 less than 1% of all students attended for-profit colleges; today 31% do
• Over 50 non-profit universities partner with for-profit providers (e.g., Bisk, eCollege/Pearson, 2U, Altius) to deliver accredited online education
• From 2011–2020 it is projected the US will produce 29.8 million graduates; China will produce 83.0M and India 54.1M

—GSV Advisors, 2012
Nature of work has changed

Index of Changing Work Tasks in the U.S. Economy 1960-2009

—Levy and Murnane, 2013
IT as…

• A delivery channel
• An experience
• An enabler of new models
The connected age

- Everything (and everyone) is interconnected
- Everyone can participate
- Pathways replace gatekeeping
E-Learning
Do-it-yourself learning

• Digitized and indexed books (28 million volumes)
• Data, archives, media
• Content, exercises
• Peer-to-peer support
• Communities
Self-directed learning

• “Learn almost anything for free”
• Khan Academy
  — 5 million unique users (in March 2012)
  — 3,000 videos
  — 150 million lessons delivered online
  — 400 million exercises completed
  — Analytics engine
• Translating into 12 languages
Trigonometry

- Hypotenuse
- Opposite
- Adjacent
- Right angle = 90°

\[ \sin \theta = \frac{3}{5} \]
\[ \cos \theta = \frac{4}{5} \]

\[ \sin x = \frac{4}{5} \]
Anytime, anywhere

• Students and tools are anytime, anywhere
  — Lectures online
  — Virtual, simulation based labs
  — Interactive assessment with instant feedback
  — Interact with tutors
  — Discussion forums

• Enables exploration

—Grimson, 2013
Immersive, collaborative

—image courtesy of NSF
Learn to do what you do

- Virtual client simulation
- Online students engage with artificial intelligence interactive agents
- Opportunity to practice interviewing skills
- Virtual clients speak, express body language, show emotion and offer immediate feedback

—Metros & Getman, 2012
Examining Distributions

Learning Objectives

1. Summarize and describe the distribution of a categorical variable in context.
   [ » Show Details... ]

2. Generate and interpret several different graphical displays of the distribution of a quantitative variable (histogram, stemplot, boxplot).
   [ » Show Details... ]

3. Summarize and describe the distribution of a quantitative variable in context: a) describe the overall pattern, b) describe striking deviations from the pattern.
   [ » Show Details... ]

4. Relate measures of center and spread to the shape of the distribution, and choose the appropriate measures in different contexts.
   [ » Hide Details... ]

Estimated Learning by Student

Class Accuracy by Sub-Objective

--Strader, 2012
A Few Facts about e-Learning
Widespread interest in e-learning

• More than 80% of institutions offer at least several courses online

• Motivations:
  — Serve the “post-traditional learner”
  — Reduce the cost of a degree
  — Increase enrollments
  — Improve the quality of teaching and learning
Concerns: Minor to Moderate

- Technological know-how of faculty
- Adequacy of staff
- Ability to keep up with others
- Affordability
- Adequacy of technology
- Faculty skepticism
- Return on investment

—ECAR e-learning study, 2013
Questions

- To improve learning rather than just automate it, what must happen?
- Is the problem technology or that we use so few of its capabilities?
- What kind of “digital engagement” should institutions provide students?
- Do institutions need digital engagement strategies to ensure appropriate access, service, and support?
Extra-institutional Education
Value chain to value web
Study support

- Tutoring and mentoring
- Available on demand, 24x7
- Matches mentors and mentees; flexible scheduling
- Shared live experiences; whiteboarding
Course providers

• $99/month (+ $39/course) or $999/year for 10 courses
• Required college courses
• Start any time; no required meeting times
• Individualized, on-demand support (online)
• Transfer credits to partner college(s)

NEW! StraighterLine for $99
The Shortest Distance Between You and Your College Degree
Large Scale Online Providers

• Massive scale
• What are they?
  — Course?
  — Experimentation platform?
  — Data collection engine?
  — Brand extension?
  — Recruitment tool?
  — Publishing model?
  — Global university?
Credentialing MOOCs

- Pearson provides edX learners the option of taking a final exam at a test center; provides certification to edX classes
- Udacity credits will be accepted by CSU; proctored exams offered by Pearson
- ACE to work with Coursera on providing credit
- Antioch University offers college credit for Coursera courses
Badges: Credit decoupled from courses

• Learning happens everywhere, not just classroom
• Recognition for skills and achievements
• Earn and display badges on the web
• Skills and experience can come from
  — Online courses
  — Peer learning
  — Volunteering
  — After-school work
A Few Facts about MOOCs
MOOCs: A snapshot

MOOCs may have made the headlines, but the broader topic of e-learning, which includes but extends beyond MOOCs, is much more widespread and of interest.
Which institutions offer MOOCs today?

MOOCs are primarily centered in large doctoral institutions, and are likely to remain so.
Why institutions are embracing MOOCs

It boils down to strategy, resources, and interest among leadership and the faculty.
Why institutions are avoiding MOOCs

- Unclear/unproven business model
- No demand for MOOCs among students
- Leaders have no interest
- Lack of financial resources
- Faculty have no interest
- MOOCs may be a fad
- MOOCs are for others
What is the value proposition of MOOCs?

An unclear business model is the major deterrent for those not offering MOOCs.

FOR INSTITUTIONS

45% of institutions view the ROI as a moderate or major concern

60% of institutions view the cost of providing and/or developing MOOCs as a moderate or major concern

AMONG A SELECT SET OF INSTITUTIONS OFFERING MOOCS

45% are discussing the possibility of awarding credit

33% are considering monetizing
NEARLY 3 IN 4 UNDERGRADUATE STUDENTS HAVE NEVER HEARD OF MOOCs
Questions

• Can you assure quality for a “product” that can’t be categorized?
• How do you assure quality in a world of “grazing”? 
• What happens to institutional coherence in a world of individual choice?
• How does quality assurance have to change in an unbundled world?
• How do you assure quality when the audience might be anyone in the world?
Learner Pathways
Students know where they stand.
Career Coach

- Employment projections
- Information about
  - Employment trends
  - Income potential
  - Required education
- Adapt courses based on trends

—Mauger, Schwartz, Greico, 2012
Student Success Plan

• Counseling and intervention software
• Case load management
  — Monitor
  — Engage
  — Support
• Early alert
• Student interface
• Results
  — First term success rate 97% vs 59%
  — 37% higher retention term-to-term
  — Five times more likely to graduate in 6 years

— Little, 2012
Better informed choices

- Personal recommendations tailored to
  - Program of study
  - Abilities
- Keyed to degree program and course sequencing
- 4% increase in A, B or C grades
- Grade prediction 90% accurate

—Denley, 2012
Educational pathways

• Cross-institutional online advising/degree attainment support system (10 campuses of University of Hawaii)

• Real-time “academic journey system”
  — Course choices and effect of choices on degree program
  — Courses from other campuses that meet degree requirements
  — Lets advisors know which students are off-track
  — Increases transfers from community colleges to 4-year programs
  — Automatically transfers credits from 4-year institution back to community college

• Decreased time to graduation and increased graduation rate reducing cost to student, state and support programs
A Few Facts about Analytics
Analytics is more than reporting

Data and Information
The capture and reporting of relevant data that contributes to effective planning and decision making.

Metrics and Benchmarking
Specific determinable measures of outcomes or performance that tie closely to an organization’s strategic goals.

Forecasting and Optimization
Predictive and prescriptive, encompassing statistics, data mining and modeling.

—Grajek, 2012
Analytics is a priority

Analytics is a major institutional priority at 24% of higher education institutions

Chart showing the percentage of institutions with various levels of priority for analytics.
Analytics will become even more important

TWO YEARS FROM NOW, ANALYTICS WILL BE...

86% More important
14% Just as important

...FOR HIGHER EDUCATION’S SUCCESS
Drivers of IPAS investment

- Strategic priority of student success
- Reorienting institution from access/enrollment to completion culture
- Need to better identify at-risk students and intervene
- Strategic priority of evidence-based decision making
- Funding formulas that emphasize retention, completion
- Better coordinate different advisement, student-support services
- Use human advising/support resources more efficiently
- Improve student engagement and institutional loyalty
- Need for more structured, progress-oriented programs
- Improve institutional planning (course demand, staffing, etc.)
Anticipated use of technology to deliver IPAS services in 5 years

- Increase a lot
- Increase a little
- Don’t know
What is in place for student success analytics?

- Senior leader interest
- Identification of key outcomes
- Data-driven culture
- Data access policies
- Right data
- Repeatable reports & processes
- Standardized data
- IT professionals
- Process to use data in decisions
- Right tools
- Advisors/faculty have access
- Siloed data
- Analysts
- Advisors/faculty can apply

In Place | Not in Place
Questions

• Are we leveraging technology to empower students, advisors, and faculty?
• If we don’t provide empowerment tools, will students get the information elsewhere?
• What else could we do if we leveraged empowerment tools?
Alternative Models
Joint ventures

• Increasing number of public-private joint ventures
• Augment existing skills, resources
• 2U: online platform to expand graduate programs
  — Technology and infrastructure
  — Fieldwork sites
  — Creates instructional material with faculty
  — Capital investment
• Shares tuition revenue
• “School-as-a-service”
Disaggregation of faculty roles

- Western Governors University
- Northern Arizona University
Competency-based

- 120 defined competencies
- Organized as mastery triads
  - Foundational
  - Personal and social skills
  - Content knowledge
- Demonstrate mastery by completing tasks

[Graphic icons representing different competencies]
Support model

- Coach
- Online Networks
- Accountability Partner
- Mentor

Individual Mastery Plan: Self-directed student progression through key competencies using curated e-resources

College for America
Self-paced, online associate's degree program; $2500/year
In a traditional model, students can lose time between terms, up to 76 days lost per “academic” year.

Direct2Degree

In Direct2Degree, students progress through continuous back-to-back modules to reclaim their time and maximize tuition dollars.
Free, open and peer-led

- University of the People
- Tuition-free online university
- For students with financial, geographic, societal constraints
- Open educational resources
- Volunteers
- Peer learning
- Text-based
- Students in 126 countries
Questions

• How do you assure quality for a product or process that is emergent?
• Can you set standards ahead of praxis?
• As educational processes are being decoupled and reassembled, does the process alter the definition of quality?
• Who assesses quality? The provider or the receiver?
Closing Thoughts
Change is a choice. The best choice is an informed choice.
The greatest challenge may be our assumptions about teaching, learning, and education.
IT is a game changer.